AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF FRISCO, TEXAS, REPEALING ORDINANCE NO. 16-12-97; AMENDING DIVISION 5 (ENERGY CONSERVATION), ARTICLE IV (TECHNICAL CODES), CHAPTER 18 (BUILDINGS AND BUILDING REGULATIONS), PART II OF THE FRISCO CODE OF ORDINANCES, ORDINANCE NO. 06-03-31, AS AMENDED; ADOPTING THE 2018 EDITION OF THE INTERNATIONAL ENERGY CONSERVATION CODE, SAVE AND EXCEPT THE DELETIONS AND ADDITIONS SET FORTH HEREIN; REGULATING THE DESIGN OF BUILDING ENVELOPES FOR ADEQUATE THERMAL RESISTANCE AND LOW AIR LEAKAGE AND THE DESIGN AND SELECTION OF MECHANICAL, ELECTRICAL, SERVICE WATER-HEATING AND ILLUMINATION SYSTEMS AND EQUIPMENT WHICH WILL ENABLE EFFECTIVE USE OF ENERGY IN NEW BUILDING CONSTRUCTION WITHIN THE CITY OF FRISCO, TEXAS; PROVIDING A PENALTY CLAUSE, SAVINGS/REPEALING CLAUSE, SEVERABILITY CLAUSE AND AN EFFECTIVE DATE; AND PROVIDING FOR THE PUBLICATION OF THE CAPTION HEREOF.

WHEREAS, the City Council of the City of Frisco, Texas ("City Council") has investigated and determined that it would be advantageous, beneficial and in the best interest of the citizens of the City of Frisco, Texas ("Frisco") to amend Division 5 (Energy Conversation), Article IV (Technical Codes), Chapter 18 (Buildings and Building Regulations), Part II of the Frisco Code of Ordinances, Ordinance No. 06-03-31, as amended ("Code of Ordinances"), by adopting the 2018 Edition of the International Energy Conservation Code, save and except the deletions and additions set forth below; and

WHEREAS, the City Council has investigated and determined that in order to most effectively make the deletions and additions necessary to Frisco's Code of Ordinances, Division 5 (Energy Conversation), Article IV (Technical Codes), Chapter 18 (Buildings and Building Regulations), Part II of the Frisco Code of Ordinances, it is in the best interest of the citizens of Frisco to repeal Ordinance No. 16-12-97 (Energy Conservation Code), in its entirety, and replace it with this Ordinance, adopting the 2018 Edition of the International Energy Conservation Code, save and except the deletions and additions set forth below.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF FRISCO, TEXAS:

SECTION 1: Findings Incorporated. The findings set forth above are incorporated into the body of this Ordinance as if fully set forth herein.

SECTION 2: Repeal of Ordinance No. 16-12-97. Ordinance No. 16-12-97 is hereby repealed, in its entirety, and replaced by this Ordinance. The effective date of the repeal discussed in this Section shall not occur until the effective date of this Ordinance at which time Ordinance No. 16-12-97 shall be repealed. Such repeal shall not abate any pending prosecution

and/or lawsuit or prevent any prosecution and/or lawsuit from being commenced for any violation of Ordinance No. 16-12-97 occurring before the effective date of this Ordinance.

SECTION 3: Amendment to Division 5 (Energy Conversation), Article IV (Technical Codes), Chapter 18 (Buildings and Building Regulations), Part II of the Frisco Code of Ordinances. Division 5 (Energy Conversation), Article IV (Technical Codes), Chapter 18 (Buildings and Building Regulations), Part II of the Frisco Code of Ordinances is hereby amended for the sole purpose of adopting new energy conservation code regulations as set forth in the International Energy Conservation Code, copyrighted by the International Code Council, Inc., save and except the deletions and additions set forth in Exhibit A, attached hereto and incorporated herein for all purposes, regulating the design of building envelopes for adequate thermal resistance and low air leakage and the design and selection of mechanical, electrical, service water-heating and illumination systems and equipment which will enable effective use of energy in new building construction located within Frisco ("2018 International Energy Conservation Code"). The 2018 International Energy Conservation Code is made a part of this Ordinance as if fully set forth herein. Three (3) copies of the 2018 International Energy Conservation Code are on file in the office of the City Secretary of Frisco being marked and designated as the 2018 International Energy Conservation Code. The deletions and additions set for in Exhibit A are located on Frisco's website under Development Services.

SECTION 4: Savings/Repealing. All provisions of any ordinance in conflict with this Ordinance are hereby repealed to the extent they are in conflict; but such repeal shall not abate any pending prosecution for violation of the repealed ordinance, nor shall the repeal prevent a prosecution from being commenced for any violation if occurring prior to the repeal of the ordinance. Any remaining portion of conflicting ordinances shall remain in full force and effect.

SECTION 5: Penalty Provision. Any person, firm, corporation or business entity violating this Ordinance shall be deemed guilty of a misdemeanor, and upon conviction therefore, shall be fined a sum not exceeding TWO THOUSAND AND NO/100 ($2,000.00), and each and every day that such violation continues shall be considered a separate offense; provided, however, that such penal provision shall not preclude a suit to enjoin such violation. Frisco retains all legal rights and remedies available to it pursuant to local, state and federal law.

SECTION 6: Severability. Should any section, subsection, sentence, clause or phrase of this Ordinance be declared unconstitutional and/or invalid by a court of competent jurisdiction, it is expressly provided that any and all remaining portions of this Ordinance shall remain in full force and effect. Frisco hereby declares that it would have passed this Ordinance, and each section, subsection, clause or phrase thereof, regardless of whether any one or more sections, subsections, sentences, clauses or phrases is declared unconstitutional and/or invalid.

SECTION 7: Effective Date. This Ordinance shall become effective upon its passage and publication as required by the City Charter and by law.

DULY PASSED AND APPROVED BY THE CITY COUNCIL OF THE CITY OF FRISCO, TEXAS, on this 19th day of November, 2019.

Jeff Cheney, Mayor

ATTESTED AND CORRECTLY RECORDED:

Kristi Morrow, City Secretary

APPROVED AS TO FORM:

Abernathy Roeder Boyd & Hullett, P.C.
Ryan D. Pittman, City Attorneys

Dates of Publication: November 22 and November 29, 2019 *Frisco Enterprise*

Exhibit A
CITY OF FRISCO DELETIONS/ADDITIONS
2018 INTERNATIONAL ENERGY CONSERVATION CODE[1]

The following deletions and additions to the 2018 International Energy Conservation Code are hereby approved and adopted (*i.e.* deletions evidenced by ~~strikethrough~~ and additions evidenced by underline)[2]:

Chapter 1 [CE] Scope and Administration of the 2018 International Energy Conservation Code is amended as follows:

Section C102 Alternate Materials, Design and Methods of Construction and Equipment of the 2018 International Energy Conservation Code is added as follows:

C102.1.2 Alternative compliance. A building certified by a national, state, or local accredited energy efficiency program and determined by the Energy Systems Laboratory to be in compliance with the energy efficiency requirements of this section may, at the option of the Code Official, be considered in compliance. The United States Environmental Protection Agency's Energy Star Program certification of energy code equivalency shall be considered in compliance. The requirements identified as "mandatory" in Chapter 4 shall be met.

Chapter 2 [CE] Definitions of the 2018 International Energy Conservation Code is amended as follows:

C202 General Definitions of the 2018 International Energy Conservation Code is added as follows:

PROJECTION FACTOR. The ratio of the horizontal depth of the overhang, eave or permanently attached shading device, divided by the distance measured vertically from the bottom of the fenestration glazing to the underside of the overhang, eave or permanently attached shading device.

Chapter 4 [CE] Commercial Energy Efficiency of the 2018 International Energy Conservation Code is amended as follows:

Section C402 Building Envelope Requirements of the 2018 International Energy Conservation Code is amended as follows:

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[1] Unless otherwise expressly provided herein, all phrases, words and/or terms used herein shall have the same meaning ascribed to the same in the 2018 International Energy Conservation Code (regardless of whether such phrases, words and/or terms are italicized herein).

[2] Other italicized and bold notations are provided throughout for informational purposes only. By way of example only, "***[Paragraph remains unchanged.]***".

C402.2 Specific building thermal envelope insulation requirements (Prescriptive).

C402.2.8 Insulation installed in walls. To ensure insulation remains in place, insulation installed in walls shall be totally enclosed on all sides consisting of framing lumber, gypsum, sheathing, wood structural panel sheathing, netting or other equivalent material approved by the building official.

Section C408 Maintenance information and system commissioning of the 2018 International Energy Conservation Code is amended as follows:

C408.3.1 Functional Testing. Prior to passing final inspection, the registered design professional or approved agency shall provide evidence that the lighting control systems have been tested to ensure that control hardware and software are calibrated, adjusted, programmed, and in proper working condition in accordance with the construction documents and manufacturer's instructions. Functional testing shall be in accordance with Sections C408.3.1.1 through C408.3.1.3 for the applicable control type.

Chapter 1 [RE] Scope and Administration of the 2018 International Energy Conservation Code is amended as follows:

Section R102 Alternate Materials, Design and Methods of Construction and Equipment of the 2018 International Energy Conservation Code is added as follows:

R102.1.2 Alternative compliance. A building certified by a national, state, or local accredited energy efficiency program and determined by the Energy Systems Laboratory to be in compliance with the energy efficiency requirements of this section may, at the option of the Code Official, be considered in compliance. The United States Environmental Protection Agency's Energy Star Program certification of energy code equivalency shall be considered in compliance. Regardless of the program or the path to compliance, each 1- and 2-family dwelling shall be tested for air and duct leakage as prescribed in Section R402.4 and R403.3.3, respectively. The requirements identified as "mandatory" in Chapter 4 shall be met.

Section R105 Inspections of the 2018 International Energy Conservation Code is amended as follows:

R105.2 Required inspections. The code official or his or her designated agent, upon notification, shall make inspections set forth in Sections R105.2.1 through R105.2.5. When an alternate energy efficiency program has been permitted, that program's protocols for inspection shall be followed. The following inspections will be required in addition to required code prescribed or alternate compliance protocols: Polyseal (Pre-Batt/Blown-in Blanket System). Visual air sealing inspection alternative alone shall not be used to demonstrate compliance. All

homes shall be tested for air tightness. Documentation required onsite at the time of inspection shall include:

1. Matching Air-Heating and Refrigeration Institute (AHRI) System Certification (Final);

2. Matching AHRI Furnace Certification;

3. Matching Air Conditioning Contractors of America (ACCA) Manual J (most current published edition) (rough frame); and

4. Matching ACCA Manual D (most current published edition)(rough frame) with layout; and an approved HVAC commissioning report (final).

Section R105.4 Approved inspection agencies of the 2018 International Energy Conservation Code is amended as follows:

R105.4 Approved inspection agencies. The code official is authorized to accept reports of third-party inspection agencies not affiliated with the building design or construction, provided that such agencies are approved as to qualifications and reliability relevant to the building components and systems they are inspecting. All third party inspection agencies shall register annually with Development Services and provide documentation of code or organization certification. Inspectors, plan reviewers and technicians of inspection agencies shall hold a current code or organization certification under the compliance method chosen.

Approved qualifying and certifying organizations shall include:

- Residential Energy Services Network (RESNET),
- International Energy Conservation Code (IECC); and
- Building Performance Institute (BPI).

Exception: Additional qualifying organizations may be allowed at the building official's discretion.

All registered third-party inspection agencies shall be subject to a random review process by Development Services to ensure compliance with these minimum standards. This review may include, but not limited to:

1. Visual observation of site inspection procedures;

2. Accuracy of testing results; and

3. Verification of documentation provided for permitting.

The building official reserves the right to require corrections to:

1. Registered third party inspection agencies energy analysis;

2. Documentation procedures;

3. Inspection procedures; and/or

4. Other elements of energy efficiency verification to ensure submitted minimum standards are met.

Chapter 2 [RE] Definitions of the 2018 International Energy Conservation Code is amended as follows:

R202 General Definitions of the 2018 International Energy Conservation Code is added as follows:

PROJECTION FACTOR. The ratio of the horizontal depth of the overhang, eave or permanently attached shading device, divided by the distance measured vertically from the bottom of the fenestration glazing to the underside of the overhang, eave or permanently attached shading device.

DYNAMIC GLAZING. Any fenestration product that has the fully reversible ability to change performance properties, including U-factor, solar heat gain coefficient (SHGC), or visible transmittance (VT).

Chapter 4 [RE] Residential Energy Efficiency of the 2018 International Energy Conservation Code is amended as follows:

Section R402 Building Thermal Envelope of the 2018 International Energy Conservation Code is amended as follows:

R402.2.14 Insulation installed in walls. To ensure that insulation remains in place, insulation installed in walls shall be totally enclosed on all sides consisting of framing lumber, gypsum, sheathing, wood structural panel sheathing, netting or other equivalent material approved by the building official.

TABLE 402.3.2[a]
MULTIPLIERS FOR PERMANENT PROJECTIONS

Projection Factor	SHGC Multiplier (all Other Orientation)	SHGC Multiplier (North Oriented)
0 - 0.10	1.00	1.00
>0.10 – 0.20	0.91	0.95
>0.20 – 0.30	0.82	0.91

>0.30 – 0.40	0.74	0.87
>0.40 – 0.50	0.67	0.84
>0.50 – 0.60	0.61	0.81
>0.60 – 0.70	0.56	0.78
>0.70 – 0.80	0.51	0.76
>0.80 – 0.90	0.47	0.75
>0.90 – 1.00	0.44	0.73

a. North oriented means within 45 degrees of true north.

R402.4.1.2 Testing. *[Paragraph remains unchanged]*

Mandatory testing shall only be performed by individuals who are certified to perform air infiltration testing certified by national or state organizations as approved by the building official. Certified individuals must be an independent third-party entity, and may not be employed or have any financial interest in the company that constructs the structure.

R402.4.1.3 (N1102.4.1.3) Testing option – ACH tradeoff. As an option to the air leakage rate set out in Section R402.4.1.2 (N1102.4.1.2), 1- and 2-family homes meeting all of the listed criteria below and the thermal envelope requirements in Table R402.4.1.3 (N1102.4.1.3) will be considered compliant when tested and verified as having an air leakage rate to not less than or equal to four air changes per hour when tested and reported in accordance with the testing standards and reporting criteria listed in Section R402.4.1.2 (N1102.4.1.2)

The compliance equivalency is limited as follows:

1. Limited to a conditioned floor area between 1,000 and 6,000 square feet,
2. Limited to between 2 to 6 bedrooms,
3. Assumes all ductwork and mechanical equipment is located in the unconditioned attic,
4. Assumes typical wood framing in the walls and roof, and
5. Assumes one of the following heating/cooling systems:

a. All electric system with a heat pump for heating, or
b. A system with electric cooling and natural gas heating.

Dwellings using electric resistance strip heating do not qualify for this tradeoff.

TABLE R402.4.1.3 (N1102.4.1.3)[a]

Envelope Component	Option #1	Option #2
R402.4 Air Leakage	≤ 4 ACH50	≤ 4 ACH50
Wall Insulation *R*-value	R13 + R3[b]	R13 + R3 [b]
Fenestration *U*-factor	≤ 0.32	≤ 0.32
Fenestration SHGC	≤ 0.25	≤ 0.25
Ceiling *R*-value	≥ R49	≥ R49
Duct Insulation *R*-value	R8	R6

Radiant Barrier Required	No	Yes

[a] Except for the values listed in the table, all other mandatory code provisions are applicable.

[b] The first value listed is the *R*-value of cavity insulation, the second value is the *R*-value of the continuous insulation or insulated siding.

Section R403 Systems of the 2018 International Energy Conservation Code is amended as follows:

R403.3.2 Sealing (Mandatory). Ducts, air handlers and filter boxes shall be sealed with duct mastic. Mastic shall not be applied to the duct jacket as this inhibits inspection of connections. Joints and seams shall comply with either the international Mechanical Code or International Residential Code, as applicable. All HVAC plenums on the supply & return side must be constructed of sheet metal (no duct board or exposed framing) with external insulation or equivalent material approved by the building official.

R403.3.3 Duct Testing (Mandatory). ***[Paragraph remains unchanged.]***

Mandatory testing shall only be performed by individuals who are certified to perform duct testing leakage testing certified by national or state organizations as approved by the building official. Certified individuals must be an independent third-party entity, and may not be employed or have any financial interest in the company that constructs the structure.

R403.3.5 Building cavities (Mandatory). Building framing cavities shall not be used as ducts or plenums.

Exception: Interior framing cavities may be used as a low resistance return air path when the drywall is sealed to the top plate at all unconditioned attic / wall interfaces using caulk, foam, drywall adhesive (but not other construction adhesives), or equivalent material.

R403.5.3 Hot water pipe insulation (Mandatory ~~Prescriptive~~). Insulation for hot water piping with a thermal resistance, R-value, of not less than R-3 shall be applied to piping ½" and larger in nominal diameter. ~~the following:~~ ***[Remainder is deleted]***

R403.6 Mechanical ventilation (Mandatory). ***[Paragraph remains unchanged.]***

Outdoor air intakes must be screened and located a minimum of 60 inches (1524 mm) from all roofing materials that are located below the air intake (except metal roofs where roof penetration is allowed). Intakes are prohibited directly over porch/balcony areas or in soffits/eaves within 10 feet (3048 mm) of porch/balcony. Method of exhaust only shall not be used to fulfill the requirement for ventilation without providing for an approved controlled source of filtered relief air.

Section R405 Simulated Performance Alternative (Performance) of the 2018 International Energy Conservation Code is amended as follows:

R405.6.2 Specific Approval. ***[Paragraph remains unchanged.]***

Acceptable performance software simulation tools may include, but are not limited to, REM Rate™, Energy Gauge® and IC3. Other performance software programs accredited by RESNET BESTEST and having the ability to provide a report as outlined in R405.4.2 may also be deemed acceptable performance simulation programs and may be considered by the building official.

Section R406 Energy Rating Index Compliance Alternative of the 2018 International Energy Conservation Code is amended as follows:

Section R406.4 ERI-based compliance of the 2018 International Energy Conservation Code is amended as follows:

[Table R406.4 is deleted and replace as prescribed below.]

TABLE 406.4[1]
MAXIMUM ENERGY RATING INDEX

CLIMATE ZONE	ENERGY RATING INDEX
3	63

1. This table is effective from September 1, 2019.

TABLE 406.4[2]
MAXIMUM ENERGY RATING INDEX

CLIMATE ZONE	ENERGY RATING INDEX
3	59

2. This table is effective from September 1, 2022.

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INDEX

(The Index is provided for informational purposes only to note the location of the deletions/additions in the 2018 International Energy Conservation Code as set forth in this Ordinance)

END OF EXHIBIT A